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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,388	03/25/2004	Steven T. Fink	250826US6YA	5547

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EXAMINER	
ZERVIGON, RUDY	
ART UNIT	**PAPER NUMBER**
1763	

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/808,388	FINK, STEVEN T.	
	Examiner	Art Unit	
	Rudy Zervigon	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) *13-18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 19-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. This application contains claims 13-18 drawn to an invention nonelected with traverse in Paper No. October 24, 2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "first hole", "second hole", "first diameter", "second diameter", "recessed area", "a spring with an axis" must be shown or the features canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 20 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant's claimed "blind hole" is a term left undefined in the specification as originally filed.

6. Claim 21 recites the limitation "ball". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 1-4, 6, 11, 12, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maydan; Dan et al. (US 5746875 A) in view of Halder; Werner et al (US 5845898 A). Maydan teaches a plasma processing device (Figure 7E, 8; column 9, lines 22-38)

comprising: an inject plate (75, 72, 74; Figure 7E) including a first hole (85, 90, 80; Figure 7E) with a first diameter; an upper electrode (10; Figure 7E, 8) including a second hole (46; Figure 7E) with a recessed area having a second diameter larger than the first diameter – claim 1

Maydan further teaches favorable materials for use in plasma processing environments including aluminum, ceramic, and quartz (column 3; lines 5-16).

Maydan does not teach:

i. a hybrid ball-lock device configured to removably secure Barne's inject plate (75, 72, 74; Figure 7E) to Barne's upper electrode (10; Figure 7E, 8) by expanding into the recessed are – claim 1

ii. The plasma processing device (Figure 7E, 8; column 9, lines 22-38) of claim 1, wherein the hybrid ball-lock device comprises an actuating hybrid ball-lock device, as claimed by claim 2

iii. The plasma processing device (Figure 7E, 8; column 9, lines 22-38) of claim 1, wherein the hybrid ball lock device comprises an actuating hybrid spring-plunger device, as claimed by claim 3

iv. The plasma processing device (Figure 7E, 8; column 9, lines 22-38) of claim 1 wherein the hybrid ball-lock device comprises a ceramic head, as claimed by claim 4

v. The plasma processing device (Figure 7E, 8; column 9, lines 22-38) of claim 1 wherein the hybrid ball-lock device comprises a quartz head, as claimed by claim 6

vi. The plasma processing device (Figure 7E, 8; column 9, lines 22-38) of claim 1 wherein the hybrid ball-lock device or threaded shaft is removably connected to a release button, as claimed by claim 11

vii. The plasma processing device (Figure 7E, 8; column 9, lines 22-38) of claim 1, wherein the hybrid ball-lock device comprises at least one retaining ball, as claimed by claim 12

viii. The plasma processing device (Figure 7E, 8; column 9, lines 22-38) of claim 1, further comprising a process chamber (200; Figure 8) in which the inject plate (75, 72, 74; Figure 7E) is removably secured by the hybrid ball-lock device, and the inject plate (75, 72, 74; Figure 7E) is configured to accept insertion to the ball-lock device from inside the process chamber (200; Figure 8), as claimed by claim 19

ix. The plasma processing device (Figure 7E, 8; column 9, lines 22-38) of claim 19, wherein the hybrid ball-lock device comprises a spring with an axis orientated perpendicular to an axis of the second hole (46; Figure 7E) configured to push a ball into the recessed area, as claimed by claim 21

Halder teaches a ball-lock device (Figures 1,2; column 3; lines 1-40) including:

x. A hybrid ball-lock device (Figures 1,2; column 3; lines 1-40) comprises an actuating hybrid ball-lock device (column 3, lines 14-15), as claimed by claim 2

xi. a hybrid ball lock device (Figures 1,2; column 3; lines 1-40) comprises an actuating hybrid spring-plunger device (8, 2; Figures 1,2; column 3; lines 14-15), as claimed by claim 3

xii. a hybrid ball-lock device (Figures 1,2; column 3; lines 1-40) or threaded shaft (3; Figures 1,2; column 3; lines 1-40) is removably connected to a release button (15; Figures 1,2; column 3; lines 21-31), as claimed by claim 11

xiii. a hybrid ball-lock device (Figures 1,2; column 3; lines 1-40) comprises at least one retaining ball (7,4; Figures 1,2; column 3; lines 14-20), as claimed by claim 12

xiv. the hybrid ball-lock device (Figures 1,2; column 3; lines 1-40) comprises a spring (2; Figure 2) with an axis orientated perpendicular to an axis of a second hole (between 1 and 18; Figure 1) configured to push a ball (7,4; Figures 1,2; column 3; lines 14-20) into the recessed area (between 9 and 3; Figure 1), as claimed by claim 21

It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace Maydan' securing means (bolts; Figure 7E) with Halder's ball-lock device (Figures 1,2; column 3; lines 1-40), made of process-compliant materials as taught by Maydan.

Motivation to replace Maydan' securing means with Halder's ball-lock device, made of process-compliant materials is for "releasably securing two objects" as taught by Halder (column 1; lines 4-6) with insulating materials as taught by Maydan ([0013]).

9. Claims 5, and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maydan; Dan et al. (US 5746875 A) and Halder; Werner et al (US 5845898 A) in view of Dornfest; Charles N. et al. (US 5680013 A). Maydan and Halder are discussed above

Maydan and Halder do not teach:

xv. The plasma processing device (Figure 7E, 8; column 9, lines 22-38) of claim 1 wherein the hybrid ball-lock device comprises a silicon head, as claimed by claim 5

xvi. The plasma processing device (Figure 7E, 8; column 9, lines 22-38) of claim 1 wherein the hybrid ball-lock devices comprises an anodized aluminum head, as claimed by claim 7

xvii. The plasma processing device (Figure 7E, 8; column 9, lines 22-38) of claim 1 wherein the hybrid ball-lock device comprises a metallic head, as claimed by claim 8

xviii. The plasma processing device (Figure 7E, 8; column 9, lines 22-38) of claim 6 wherein the head is coated with a ceramic material, as claimed by claim 9

Dornfest teaches numerous materials used as plasma facing parts in plasma processing reactors (column 1). Specifcally, Dornfest teaches materials of silicon facing material for consumption during processing (column 1; lines 42-63), anodized aluminum (column 1; lines 31-40), aluminum metal (column 1, lines 64-65), and ceramic coatings (column 4; lines 5-10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Dornfest's plasma process resistant materials in place of Maydan and Halder's materials.

Motivation to use Dornfest's plasma process resistant materials in place of Maydan and Halder's materials is for protecting plasma-exposed surfaces from attack as taught by Dornfest (column 1; lines 10-20).

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maydan; Dan et al. (US 5746875 A) and Halder; Werner et al (US 5845898 A) in view of Moser; Eva Maria (US 6686302 B1). Maydan and Halder are discussed above. Maydan and Halder do not teach the plasma processing device (Figure 7E, 8; column 9, lines 22-38) of claim 1, wherein the hybrid ball-lock device comprises a CRES fastener housing, as claimed by claim 10. Moser teaches a plasma CVD reactor (10, Figure 1) made of corrosion-resistant steel (column 4; lines 30-38).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Moser's corrosion-resistant steel material in the apparatus of Maydan and Halder.

Motivation to use Moser's corrosion-resistant steel material in the apparatus of Maydan and Halder is for corrosion resistance during plasma processing as taught by Halder (column 4; lines 30-38).

Response to Arguments

11. Applicant's arguments with respect to claims 1-12, and 19-21 have been considered but are moot in view of the new grounds of rejection.

Conclusion

12. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272-1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1763 art unit is (571) 273-8300. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner

can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.

7/23/6